REMARKS

This paper is in response to the Office action of October 22, 2004, and is timely filed as it is accompanied by a Request for Continuing Examination in addition to the requisite request for an extension of time. In light of the above amendments and the following remarks, applicants respectfully request reconsideration and withdrawal of the rejections.

Claims 1-21 are pending in this patent application, with claims 1, 12 and 19 being independent claims. The examiner has rejected claims 1-21.

35 U.S.C. §112 REJECTIONS

Applicants respectfully traverse the rejection of claims 1-12 as indefinite. Reconsideration and withdrawal of this rejection is respectfully requested in light of the amendments made to the claims. In particular, each of claims 1-3, 6-12, 17 and 19 is amended to eliminate the use of the terms "adapted to" and/or "capable of" in order to assure that these claims are definite. Additionally, claims 13-18 are amended to eliminate superfluous language and to assure that these claims are not construed to include step plus function limitations. These amendments are not made for patentability purposes, but to clarify the construction of these claims.

35 U.S.C. §103 REJECTIONS

Applicants respectfully traverse the rejections of claims 1-21 under 35 U.S.C. 103(a) over Santoline et al. (PCT WO 97/38362) ("Santoline"), in view of "Admitted prior art" ("AD"), Brown et. al. (U.S. Patent No. 6,377,859) ("Brown") and Bowling (PCT WO 97/45778) ("Bowling"). Applicants respectfully request reconsideration and withdrawal of these rejections.

Basically, each of claims 1-18 recites a system or a method that stores, on a single simulation computer, both a configuration application which is capable of being executed on the computer to create control modules for execution by a distributed controller, and a controller application which can be executed on a controller within a distributed process control system to implement the control modules during operation of the distributed process control system but which can be executed on the simulation computer to simulate the execution of the control modules. More particularly, the configuration application creates one or more control modules capable of being used by a distributed process controller and the

controller application then causes execution of the control modules within the same simulation computer to allow both the design and simulation of the operation of control modules within a distributed process control system on a single computer. Furthermore, these claims recite that the control modules are modules that, when executed within the distributed process control system, communicate with elements in other devices, but that the simulation system simulates the execution of these control modules within a single computer, i.e., without the need to communicate outside of the simulation computer. Thus, the recited system and method simulates the operation of various components within a distributed process control system as well as simulating communications between these components.

In this manner, the system and method of claims 1-18 enable a distributed process control routine that has components that are to run and stored in different devices when in use in a distributed process control system to be ***both*** designed (created) and tested on a single computer, e.g., a single processor. Such a combined design and operational testing system is particularly useful in distributed process control systems (in which control routines are generally designed to be located and executed in different process control devices, such as in different controllers and field devices at separate locations in the process plant) because it is sometimes difficult to correctly configure or create the appropriate process control routines and their communication interconnections in the first place.

None of the cited art discloses or suggests that it is possible or even desirable to simulate, on a single computer, the creation and execution of various control modules which are ultimately designed to be stored in and used in different devices within a distributed process control system. The examiner has done nothing more than to pull various components from various prior art distributed process control systems and claim that it would have been obvious to place all of these components on a single computer for simulation purposes. Unfortunately, none of the cited art discloses or suggests doing so, nor has the examiner pointed to any specific disclosure in the cited art for providing such a motivation or suggestion. To the contrary, the cited art either fails to disclose simulation systems at all (e.g., Brown) or discloses simulation systems that specifically operate in multiple devices to simulate a process control system, not in a single device as recited by claims 1-18. In other words, the examiner's contention that it would have been obvious to combine the cited art to produce a single computer that simulates the operation of a distributed process control system can not stand when the simulation systems disclosed in the prior art ***all*** require more than one computer or device to operate.

In particular, Santoline discloses a simulation system for a distributed process control system which specifically requires a simulation computer 21 that acts as an interface between (1) process controllers (DPUs 7) that are running actual control routines within the process plant, (2) a plant model run in a different computer 19 and (3) user interfaces 13 associated with still different computers that enable operator input. Importantly, the simulation computer 21 of Santoline specifically uses the outputs of the DPUs 7 when the DPUs 7 are actually running within the plant to "simulate" the plant operation. The Santoline system does not and cannot simulate the operation of the plant without communicating with the distributed controllers actually running within the plant. It is not understood, nor has the examiner explained how the Santoline patent could possibly suggest or provide a motivation for implementing a complete simulation of the distributed control software in a single computer that is not the distributed controllers running in the plant (as is recited by each of claims 1-18) when Santoline specifically requires communications with the distributed process controllers within the plant.

While the admitted prior art discusses the use of simulation programs within a process plant using distributed control, the admitted prior art makes it clear that such simulation programs require communication with the distributed controllers already set up within the plant. Thus, the admitted prior art is similar to Santoline in that the admitted prior art includes a simulation computer that must communicate with the distributed controllers within the process plant to perform simulation activities. See page 3, lines 4-24 of the application as originally filed, in which it is clear that the prior art simulation software is stored in a computer that must communicate with the control software stored within the controllers (i.e., the distributed controllers within the process plant). In other words, while the art discussed in the background section of the application includes both configuration software, which can be used to create control modules, and controller software, which runs these modules, these two software components are stored in and executed by completely different computers, as is necessary in distributed process control systems in which controllers are typically located away from operator or other user interfaces. In fact, with the art discussed in the background section of the application, the configuration software and the controller software are specifically designed to be operated in different computers, not in the same computer. Likewise, there is no suggestion in the background art section of the application or in any of the other prior art that is desirable or even possible to place distributed process control configuration software in the same computer as the controller software which runs control

modules created by the configuration software. In fact, such a simulation system is, for all practical purposes, the exact opposite of the design of distributed process control systems in which controller software is specifically distributed to different locations within the process plant away from the centralized control room (to put this functionality closer to where it is used within the plant) while the configuration software is stored in and run in the centralized control room that is accessible to the user or system designer.

As noted above, while Brown discloses a distributed process control system, it does not, in any manner, disclose a simulation system for simulating the distributed process control system. As a result, it is impossible for Brown to suggest that it might be possible or desirable to create a distributed process control simulation system that runs on a single computer.

While Bowling discloses a simulation system for a process control system, Bowling specifically discloses re-hosting a controller application directly from a controller within a process plant to the simulation system to simulate the operation of the controller. Thus, Bowling specifically requires that the control software which is to be used in the simulation comes from the actual process controller within the plant. Thus, to be created, the simulation system of Bowling requires communications between separate devices. Bowling does not disclose or suggest that the control modules to be simulation can be created in the first place by controller configuration software stored in the same simulation computer.

Likewise, during operation, the Bowling simulation system requires communication between different computer devices. In fact, the simulation system of the Bowling device is specifically disclosed as including different VME cards interconnected by a VME backplane (see page 6, second paragraph), which is a communication network connecting different computer devices. Thus, even the elements disclosed in Bowling as being part of the simulation system 305 are not on the same computer or implemented on the same processor of a simulation computer, as is recited by each of claims 1-18. As a result, unlike the system and method recited by claims 1-18, Bowling does not disclose or suggest a simulation system that is run and implemented on a single computer, but instead requires communication between different computers or devices to both set up the simulation system as well as to run the simulation system.

The examiner's statement that Bowling allows the "design, test and verification of various control system strategies in a comprehensive manner *without* using the communication network or data highway [emphasis added]" is simply incorrect and not

supported by his citation. In contrast to the examiner's assertion, Bowling merely indicates that users can simulate a control device while avoiding the need to design around a ***proprietary*** communication network or data highway, not that no communication network is present or needed. Bowling, page 4, para 3. Indeed, Bowling states that "the invention provides an API ... to exercise the control algorithm program code. The API is designed to allow the actual device controller software to operate in a *non-proprietary communication's environment* [emphasis added]". Bowling, page 4, para 2. Thus, Bowling specifically contemplates the use of a communication network during implementation. Still further, Fig. 3 of Bowling specifically illustrates that the simulation system 305 communicates via the non-proprietary network 310 to the MMI 355 and the plant model 205, all of which are different devices. For these reasons, Bowling does not disclose or suggest a configuration design and simulation system that can be run on a single computer to both create one or more control modules (applications to be run by a controller within the process plant) and to then simulate the operation of those control modules, once created.

As indicated above, the system and method of claims 1-18 not only simulate controller operation once the controller software has been created, but also simulate or allow a user to create the controller modules in the first place so that the user can then immediately test that controller software on the simulation computer to observe its operation without having to download the controller software to a controller within the process plant and without having to communicate with any other computers or devices. None of the cited art discloses or suggests that it is even possible to provide a combined design and simulation environment in which controller software for a distributed process control system can both be created and tested on a single computer. Still further, because the simulation systems disclosed in the cited art all require communication between different computer devices both to be set up and to be run, none of the cited art provides a motivation or suggestion for creating a simulation system on a single computer. While it may not be difficult to actually place the separately available configuration application and the controller application within the same computer, it is the inventors of this application who first recognized the need or desirability of doing so within distributed process control systems for training and controller application design purposes. In other words, the only suggestion or reasoning for providing the configuration software on the same computer as the simulation software to simulate both the design and the operation of the process control system comes from the applicants'

disclosure, and not from any of the prior art, which does not recognize the need for such a combination. For these reasons, claims 1-18 are non-obvious in view of the cited art.

Each of claims 19-21 basically recites a system having a controller application which is designed to operate in a first type of a distributed controller but which acts as part of an interface between a user interface or display and a second and different type of controller that may be, for example, operating within an actual process plant. Thus, these claims recite a "viewing application [] adapted to communicate with the controller application and to use the display to display information sent from the further controller." The examiner admits that Santoline does not disclose these elements, but asserts that a combination of Santoline, Bowling, Brown and AD would produce the recited invention. However, none of the cited art discloses or suggests using a first controller application to interface with a second and different type of controller to enable a user to view information from the second controller using a viewing application designed for the first controller application. As a result, no combination of this art can produce the recited invention.

While Bowling describes a first man-machine interface (MMI) through which a device controller can be monitored and/or controlled and a second MMI which can communicate with a simulation unit, Bowling does not disclose or suggest a single MMI that can communicate with a controller application and display information sent from a further controller. That is Bowling does not disclose or suggest using a first controller application (for a first type of controller) as part of an interface to a second and different type of controller application. To the contrary, Bowling describes two separate MMIs: a first MMI for the device controller and a second MMI for the simulation unit.

In a similar manner, the mere mention in the cited portions of Brown of decentralized process control systems and open communication protocols that allow devices by different manufacturers to interoperate does not teach or suggest anything with respect to MMIs or using a first type of controller application as part of an interface to a second type of controller application. Brown, col. 2, lines 1-25. In fact, the ability of the different controllers in the Brown device to interoperate via a common communication protocol means that these controllers are using the same type of controller application. That Brown suggests that the controllers may be made by different manufacturers does not mean that these controllers are different types of controllers. Because Brown fails to disclose different types of controllers, much less using one type of controller as an interface to a second and different type of controller, Brown does not provide the needed motivation.

For these reasons, there is no motivation to combine Santoline, Bowling, Brown and AD nor would any combination of this art teach or suggest using one type of controller application as part of an interface to a second and different type of controller, as recited by claims 19-21. As a result, these claims are submitted to be patentable over the cited art and, therefore, applicants respectfully request allowance of claims 19-21.

Consideration of IDS

The examiner is respectfully requested to consider the information submitted in the IDS mailed by the applicants on March 30, 2004 (a copy of which is enclosed herewith) and to provide applicants an initialed copy of the PTO Form-1449 included therewith. Should the examiner need an additional copy of the art cited therein, the examiner is respectfully requested to contact the undersigned attorney.

Conclusion

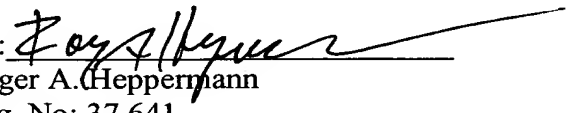
Applicants have now made an earnest attempt to place this case in condition for immediate allowance. For the foregoing reasons, applicants respectfully request reconsideration and allowance of claims 1-21.

A petition and a check for the fee for a one-month extension of time is included herewith. However, if a petition for a further extension of time under 37 CFR 1.136(a) is necessary to maintain the pendancy of this case and is not otherwise requested in this case, applicants request that the Commissioner consider this paper to be a request for an appropriate extension of time and hereby authorize the Commissioner to charge the fee as set forth in 37 CFR 1.17(a) corresponding to the needed extension of time to Deposit Account No. 13-2855 of Marshall, Gerstein & Borun LLP. Although applicants believe that no other fees are due, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 13-2855 of Marshall, Gerstein & Borun LLP.

If there are matters that can be discussed by telephone to further the prosecution of this application, applicants respectfully request that the examiner call its attorney at the number listed below.

Respectfully submitted for,

MARSHALL, GERSTEIN & BORUN LLP

By: 
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Date: February 22, 2005

06005/35628A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Nixon et al. Serial No.: 09/510,053 Title: "Integrating Distributed Process Control System Functionality on a Single Computer" Filed: February 22, 2000 Group Art Unit: 2123 Examiner: Dr. Kandasamy Thangavelu	**CERTIFICATE OF MAILING** I hereby certify that this paper and the documents referred to as enclosed therewith are being deposited with the United States Postal Service as first class mail, postage prepaid, on March 30, 2004, in an envelope addressed to Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450 Roger A. Heppermann Registration No.: 37,641

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT PURSUANT TO 37 C.F.R. § 1.97(c)(1)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 CFR 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached Form PTO-1449. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Supplemental Information Disclosure Statement is filed after the mailing date of a Non-Final Office Action but before issuance of a Final Action or Notice of Allowance. Applicant(s) hereby petition(s) that the Supplemental Information Disclosure Statement be considered under 37 C.F.R. §1.97(c)(1).

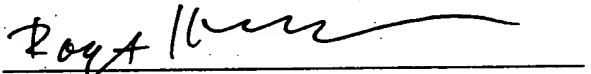
I hereby certify that each item of information contained in this Supplemental Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Supplemental Information Disclosure Statement. Please note, however, it is believed that U.S. Patent No. 5,752,008 cited herein is cumulative with respect to the WO 97/45778 reference cited previously in this application.

An English-language abstract of the non-English language references is enclosed. A copy of each reference on the Form PTO-1449 is also attached.

It is submitted that the Supplemental Information Disclosure Statement is in compliance with 37 CFR 1.98 and the Examiner is respectfully requested to consider the listed references.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 13-2855, under Order No. 06005/35628A. A duplicate copy of this paper is enclosed.

Respectfully submitted,

By: 

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March 30, 2004

Form PTO-1449 (Modified)	Atty. Docket No. 06005/35628A	Serial No. 09/510,053
SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT	Applicant(s) Mark J. Nixon, et al.	
	Filing Date February 22, 2000	Art Unit 2123

U.S. PATENT DOCUMENTS

Examiner Initials	Document Number	Issue or Publication Date	Name	Class	Subclass	Filing Date (If Appropriate)
	5,752,008	5/12/1998	Bowling	395	500	

FOREIGN PATENT DOCUMENTS

Examiner Initials	Document Number	Publication Date	Country	Translation Yes	Translation No
	HEI 08-314760	11-29-1996	Japan	X	
	HEI 07-248941	09-26-1995	Japan	X	

OTHER DOCUMENTS

	Notice of Reason for Rejection, Issued in Corresponding Japanese Patent Application Serial No. 2000-134873, dated February 3, 2004..

EXAMINER:	DATE CONSIDERED: